

Abstract

A method and a device for measuring an electrical voltage allowing measurement under open-air conditions, ~~also in the~~ ^{including} high-voltage and very high-voltage plane. Influences of temperature changes on optical and electrical parameters of the device are reduced ~~in that the method and device~~ ^{by} using light sources, at least one optical transmission path, at least one sensor element with at least one active sensor part and a plurality of sensor crystals and evaluating means making use of the Pockels effect as a measurement for the temperature, make use of optical activity. Measurement light which is generated by a light source penetrates an active sensor part which ^{has} ~~comprises~~ at least two sensor crystals, ^{and} ~~wherein there is~~ at least one active sensor part in the sensor element at which an electrical voltage drops. The polarization state of the measurement light serves as a basis for measurement. The sensor element can comprise a plurality of active sensor parts, ^{and a} ~~wherein the~~ summing of the partial voltages is ^{then} ~~then~~ correlated to form the total voltage. ^{Several} ~~A plurality of~~ sensor elements may be combined. Transmitted optical waves are detected and converted into electrical signals. The device comprises light sources, optical transmission paths, sensor elements, active sensor parts, and evaluating means.